AN2143
Application note

Programming the ST10F27X embedded Flash using the ST10FLASHER tool

Introduction

This document summarizes the different steps needed to program the internal Flash memory of the ST10F27x using the ST10Flasher tool.

The required steps to load a binary file (Intel Binary or Motorola S-Record files) on the ST10F27x embedded flash will be described.

A HEX file will be provided within an archived file as an example.

1 ST10Flasher settings

This section describes the steps required for programming the ST10F27x embedded Flash using the ST10Flasher.

To use this document, the ST10Flasher must be already installed on the development host.

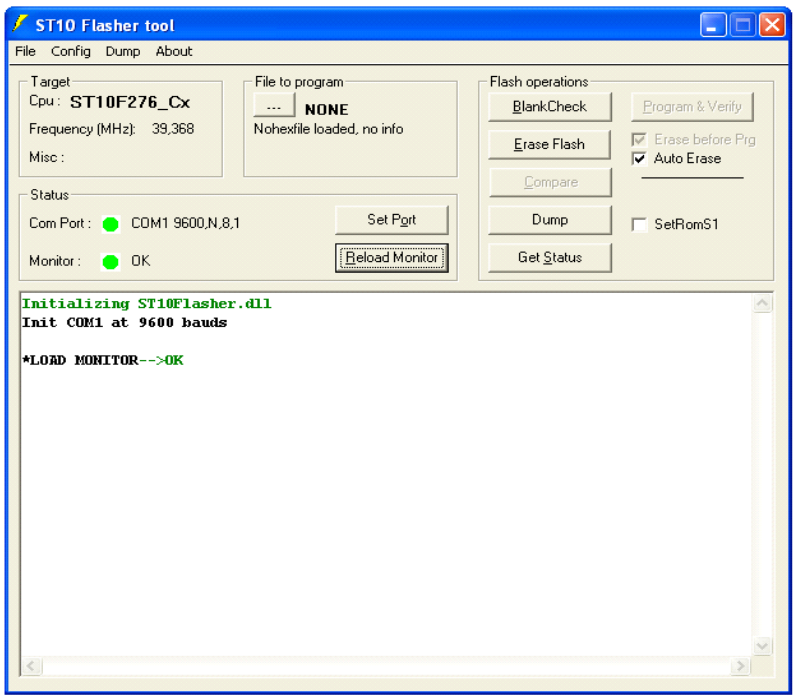
For more details on ST10Flasher installation, refer to the readme.txt file included in the ST10Flasher tool package.

1.1 Starting ST10Flasher

ST10Flasher runs on a PC connected to the ST10F27x target microcontroller via an RS232 interface.

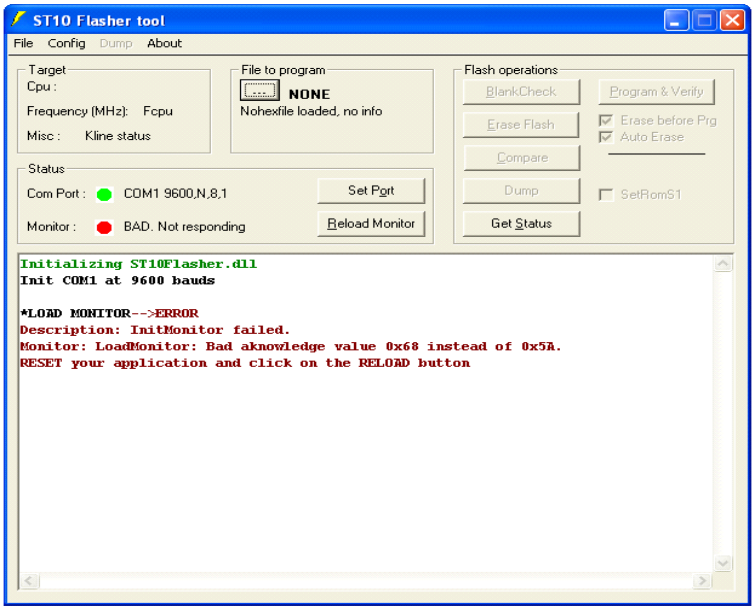
- Enter the standard bootstrap mode by forcing P0L.4 to 0 and P0L.5 to 1
- Reset the ST10
- Select ***Start -> Programs -> ST10-Flasher-2.4***

ST10Flasher starts and the following window appears:



1.2 Communication set up

If the bootstrap loader is OFF or the ST10 is not reset and you start ST10Flasher tool, you will be unable to program the ST10F27x internal flash and error messages will appear in the status window :



In this case:

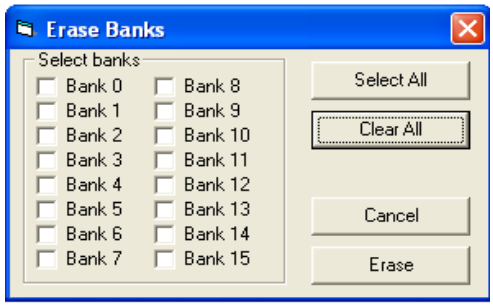
- Enter the bootstrap loader mode
- Reset the ST10
- When loading the monitor, by clicking ***Reload Monitor*** icon, the tool performs an auto-device detection. The device is then displayed in the interface indicating that you are connected to e.g ST10F276.

If the status window shows other error messages, check that the file "startup.ini" in the selected application directory corresponds to the application parameters, especially for the parameters COMPORTet BAUDRATE. Their default delivery settings are:

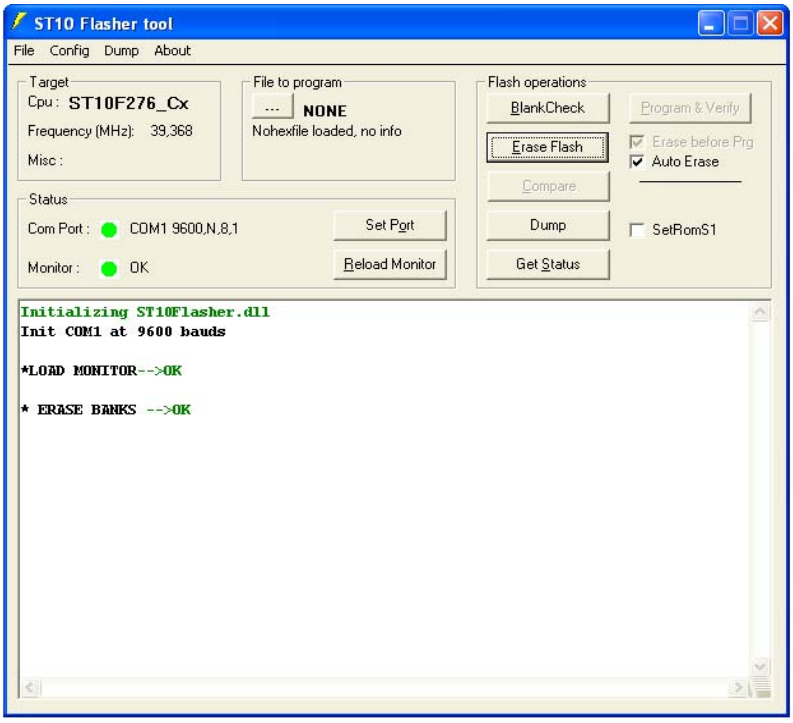
```
COMPORT = COM1
BAUDRATE = 9600,N,8,1
```

1.3 Erasing the ST10F27x embedded flash

- Click the ***ERASE FLASH*** button command.
- A window will be displayed. Mark the flash memory areas to erase.



- Click ***Erase*** to start the erase operation.
- Status message of the erase operation is written in the status window.



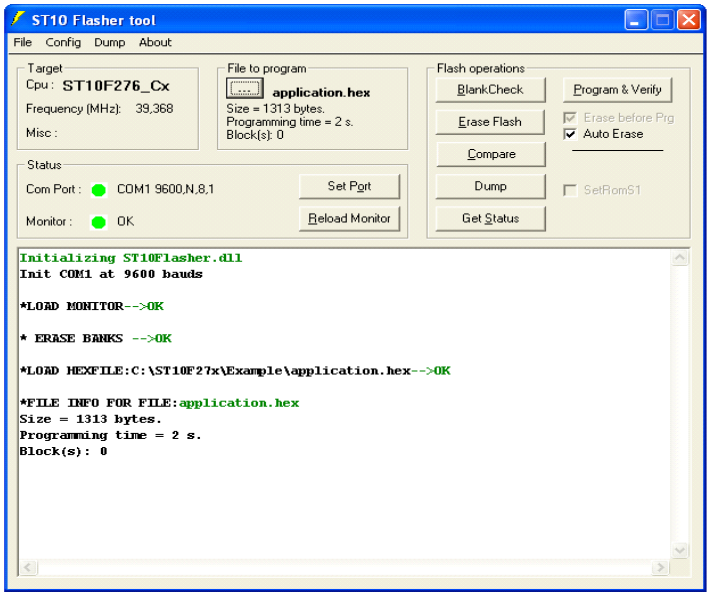
1.4 Program operation

Before programming the flash, you must make sure the device is blank. You can use the ***BlankCheck*** button and manually erase the non-blank blocks, if any exist.

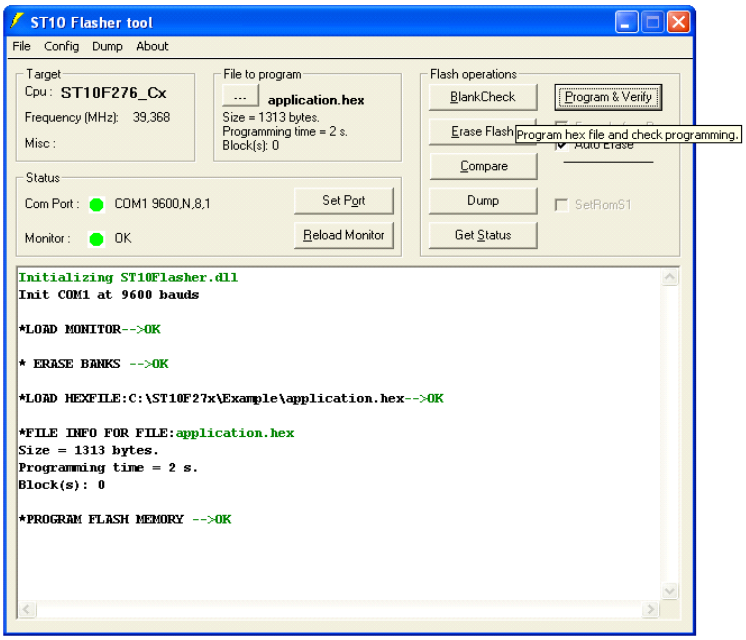
You can also activate the ***Auto Erase*** option to erase automatically before each device programming.

- Click ***File to program*** and select the Hex file *.hex (or *.S19) to program into the on-chip flash memory.

- Clicking ***OK*** or double clicking the selected file automatically loads the HEX file (or S19 file). The name of the current loaded file is displayed.
- The status window returns the result of the loading operation.



- Click on the ***Program & Verify*** button to trigger the programming operation. Now the loaded hex file is transferred to the ST10 and programmed into the embedded flash memory.



1.5 Running the program

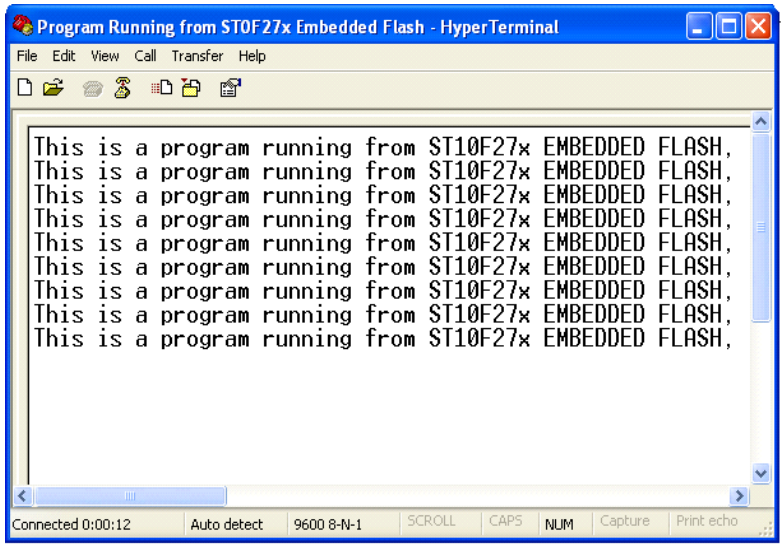
After successful programming, in order to run the program, some hardware considerations should be taken into account:

- the bootstrap loader should be switched *OFF*
- the Single Chip mode *ON* by applying a high level to /EA pin.
- then, reset the controller.

If you use the ***application.HEX*** example delivered with this application note, you can use hyperterminal to verfiy the application is working well.

For this purpose, start a terminal program on your PC with the line parameters 9600Baud, no parity, 8 bit data and 1 stop bit.

If every thing is working properly, a small text will appear on your PC screen as shown in the following Figure:



2 Revision history

Table 1. Document revision history

Date	Revision	Changes
30-Jun-2006	1	Initial release.

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